

<b>INFORMATION DISCLOSURE STATEMENT</b>  <b>PTO-1449</b>	ATTY. DOCKET NO. <b>NSL-029</b>	SERIAL NO. 10/782,017
	APPLICANT Brian M. Sager, et al.	
	FILING DATE: Feb. 19, 2004	GROUP: 1795
<b>SHEET 1 OF 5</b>		

EXAMINER INITIAL	CITE NO.	DOCUMENT NUMBER	DATE	NAME	CLAS S	SUBCL ASS
/JB/	A	3423301	01-21-1969	Sterns	204	105
	B	3586541	06-22-1971	Chamberlin	136	206
	C	3966568	06-29-1976	Crossley, et al.	205	564
	D	4191794	03-03-1980	Shirland et al.	438	80
	E	4192721	03-11-1980	Fawcett et al.	205	229
	F	4404422	09-13-1983	Green et al.	136	255
	G	4522663	06-11-1985	Ovshinsky et al.	148	403
	H	4536607	08-20-1985	Wiesmann	136	249
	I	4622432	11-11-1986	Yamazaki	136	246
	J	4642140	02-10-1987	Noufi et al.	438	95
	K	4677250	06-30-1987	Barnett et al.	136	258
	L	4806436	02-21-1989	Tada et al.	428	629
	M	4940604	07-10-1990	Suyama, et al.	427	76
	N	5045409	09-03-1991	Eberspacher, et al.	428	620
	O	5078804	01-07-1992	Chen et al.	136	260
	P	5141564	08-25-1992	Chen et al.	136	258
	Q	5244509	09-14-1993	Arao et al.	136	259
	R	5277786	01-11-1994	Kawakami	205	124
	S	5286306	02-15-1994	Menezes	136	249
	T	5356839	10-18-1994	Tuttle et al.	438	479
	U	5401573	03-28-1995	Babel et al.	428	336
	V	5436204	07-25-1995	Albin et al.	438	488
	W	5441897	08-15-1995	Noufi et al.	438	95
	X	5419781	5-1995	Hamakawa et al.	136	244
	Y	5578503	11-1996	Karg et al.	438	95
	Z	5626688	05-06-1997	Probst, et al.	136	265
/JB/	AA	5633033	05-27-1997	Nishitani et al.	427	8

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<b>SHEET 2 OF 5</b>		

/JB/	AB	5677250	10-14-1997	Knapp	501	14
	<del>AC</del>	<del>6107562</del>	<del>8-22-2000</del>	<del>Hashimoto et al.</del>	<del>136</del>	<del>252</del>
/JB/	AD	5730852	03-24-1998	Bhattacharya et al.	205	192
	AE	5925228	07-20-1999	Panitz et al.	204	484
	AF	5994163	11-30-1999	Bodegard et al.	438	84
	AG	6121541	09-19-2000	Arya	136	255
	AH	6124039	09-26-2000	Goetz et al.	428	457
	AI	6974976	12-13-2005	Hollars	257	184
	AJ	20040219730	11-4-2004	Basol	438	200
	AK	20040144419	7-2004	Fix et al.	136	252
	AL	20050183768	8-25-2005	Roscheisen et al.	136	263
	AM	20050186342	8-2005	Sager et al.	427	248.1
	AN	5013464	05/07/1991	Sugimura et al.	508	150
/JB/	AO	20070092648	4-26-2007	Duren et al.	427	255
	<del>AP</del>	<del>20040144419</del>	<del>7-2004</del>	<del>Fix et al.</del>	<del>136</del>	<del>252</del>
/JB/	AQ	6022487	2-2000	Daume et al.	252	70

**AC and AP already cited. /JB/**

**FOREIGN PATENT DOCUMENTS**

EXAMINER'S INITIALS	CITE NO.	PATENT NO.	PUBLICATION DATE MM-DD-YYYY	NAME OF PATENTEE	Translation	
					YES	NO
/JB/	AR	DE 2741954	03-29-1979	Hertel		X
	AS	EP 793277	09-03-1997	Matsuyama	X	
	AT	JP 62-89369	04-13-1987	Ito		X
	AU	JP 63-249379	10-17-1988	Tada		X
	AV	WO 02/084708	10-2002	Basol		X
	AW	WO 03/007386	01-2003	Tuttle et al.		X
/JB/	AX	JP 61244004	10-1986	Nishikawa	abstract	

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<b>SHEET 3 OF 5</b>		

**TECHNICAL PUBLICATIONS**

EXAMINER'S INITIALS	CITE NO.	Include name of the author (in CAPITAL LETTERS), title of article, title of item (book, journal , serial, etc...), date, pages, volume issue number, publisher, city/state where published
/JB/	<b>AY</b>	VIJAY K. KAPUR, ASHISH BANSAL, PHUCAN LE, AND OMAR I. ASENSIO, Non-vacuum processing of CuIn <sub>1-x</sub> Ga <sub>x</sub> Se <sub>2</sub> solar cells on rigid and flexible substrates using nanoparticle precursor inks, Thin Solid Films, 2003, 53-57, Volume 431-432, Elsevier Publishing Company, Amsterdam
	<b>AZ</b>	MARKUS E. BECK, AND MICHAEL COCIVERA, Thin-film copper indium diselenide prepared by selenization of copper indium oxide formed by spray pyrolysis, Thin Solid Films, 1996, 71-82, Volume 272, Elsevier Publishing Company, Amsterdam.
	<b>BA</b>	C. EBERSPACHER, K. PAULS, AND J. SERRA, Non-vacuum processing of CIGS solar cells, UNISUN, 223-224, 2001, Newbury Park, CA
	<b>BB</b>	T. ARITA, N. SUYAMA, Y. KITA, S. KITAMURA, T. HIBINO, H. TAKADA, K. OMURA, N. UENO, AND M. MUROZONO, CuInSe <sub>2</sub> films prepared by screen-printing and sintering method, 1988, IEEE
	<b>BC</b>	DOUGLAS L. SCHULZ, CALVIN J. CURTIS, REBECCA A. FLITTON, HOLM WIESNER, JAMES KEANE, RICHARD J. MATSON, KIM M. JONES, PHILIP A. PARILLA, ROMMEL NOUFI, AND DAVID S. GINLEY, Cu-In-Ga-Se Nanoparticle Colloids as Spray Deposition Precursors for Cu(In, Ga)Se <sub>2</sub> Solar Cell Materials, Journal of Electronic Materials, 1998, 433-437, Volume 27, Number 5, Minerals Metals & Materials Society : USA
	<b>BD</b>	CLAIRE J. CARMALT, DANIEL E. MORRISON, AND IVAN P. PARKIN, Solid-state and solution phase metathetical synthesis of copper indium chalcogenides, Journal of Materials Chemistry, 1998, 2209-2211, Volume 8, Number 10, Royal Society of Chemistry (Great Britain)
	<b>BE</b>	SHIXING WENG AND MICHAEL COCIVERA, Preparation of copper indium diselenide by selenization of copper indium oxide, Journal of Applied Physics, 1 August 1993, 2046-2052, Volume 74, Number 3, American Institute of Physics, New York
	<b>BF</b>	G.. NORSWORTHY, C.R. LEIDHOLM, A. HALANI, V.K. KAPUR, R. ROE, B.M. BASOL, AND R. MATSON, CIS film growth by metallic ink coating and selenization, Solar Energy Materials & Solar Cells, 2000, 127-134, Volume 60, Elsevier Science, Amsterdam : Netherlands
	<b>BG</b>	CHRIS EBERSPACHER, CHRIS FREDRIC, KAREN PAULS, AND JACK SERRA, Thin-film CIS alloy PV materials fabricated using non-vacuum, particles-based techniques, Thin Solid Films, 2001, 18-22, Volume 387, Elsevier Publishing Company, Amsterdam
	<b>BH</b>	C. EBERSPACHER, K. L. PAULS, AND C. V. FREDRIC, Improved processes for forming CuInSe <sub>2</sub> films, UNISUN, 1-4, Newbury Park, CA
	<b>BI</b>	CHRIS EBERSPACHER, KAREN L. PAULS, AND JOHN P. SERRA, Non-vacuum thin-film CIGS modules, Materials Research Society Symposia Proceedings, 2003, B8.27.1-B8.27.6, Volume 763, Materials Research Society, Warrendale, PA
/JB/	<b>BJ</b>	M. Kaelin, D. RUDMANN, F. KURDESAU, T. MEYER, H. ZOGG, A.N. TIWARI, CIS and CIGS layers from selenized nanoparticle precursors, Thin Solid Films, 2003, 58-62, Volume 431-432, Elsevier Science, Amsterdam : Netherlands

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<b>SHEET 4 OF 5</b>		

EXAMINER'S INITIALS	CITE NO.	Include name of the author (in CAPITAL LETTERS), title of article, title of item (book, journal , serial, etc...), date, pages, volume issue number, publisher, city/state where published
/JB/	<b>BK</b>	M. Kaelin, H. Zogg, A.N. Tiwari, O. Wilhelm, S.E. Pratsinis, T. Meyer, and A. Meyer, Electrospayed and selenized Cu/In metal particle films, Thin Solid Films, 2004, 391-396, Volume 457, Elsevier Science, Amsterdam : Netherlands
	<b>BL</b>	R.P. Raffaelle, J.G. Mantovani, S.G. Bailey, A.F. Hepp, E.M. Gordon and R. Haraway, Electrodeposited CuInSe <sub>2</sub> thin film junctions, Prepared for the 1997 Fall meeting sponsored by the Materials Research Society, December 1-5, 1997, Boston, MA
	<b>BM</b>	K.T. Ramakrishna Reddy, R.B.V. Chalapathy, M.A. Slifkin, A.W. Weiss, and R.W. Miles, Photoacoustic spectroscopy of sprayed CuGa <sub>x</sub> In <sub>1-x</sub> Se <sub>2</sub> thin films, Thin Solid Films, 2001, 205-207, Volume 387, Elsevier Science, Amsterdam : Netherlands
	<b>BN</b>	C. Guillen, and J. Herrero, Recrystallization and components redistribution processes in electrodeposited CuInSe <sub>2</sub> thin films, Thin Solid Films, 2001, 57-59, Volume 387, Elsevier Science, Amsterdam : Netherlands
	<b>BO</b>	K.T.L. de Silva, W.A.A. Priyantha, J.K.D.S. Jayanetti, B.D. Chithrani, W. Siripala, K. Blake, and I.M. Dharmadasa, Electrodeposition and characterization of CuInSe <sub>2</sub> for applications in thin film solar cells, Thin Solid Films, 2001, 158-163, Volume 382, Elsevier Science, Amsterdam : Netherlands
	<b>BP</b>	A. G. Munoz, S. B. Saidman, and J. B. Bessone, Electrodeposition of Indium onto Vitreous Carbon from Acid Chloride Solutions, Journal of The Electrochemical Society, 1999, 2123-2130, Volume 146, Number 6, Electrochemical Society Inc : USA
	<b>BQ</b>	D. Padhi, J. Yahalom, S. Gandikota, and G. Dixit, Planarization of Copper Thin Films by Electropolishing in Phosphoric Acid for ULSI Applications, Journal of the Electrochemical Society, 2003, G10-G14, Volume 150, Number 1, Electrochemical Society Inc : USA
	<b>BR</b>	George L. Schnable and John G. Javes, Electrodeposition of Molten Low-Melting Metals and Alloys from Fused-Salt Systems, Electrochemical Technology, July-August 1964, 201-206, Electrochemical Society, Manchester, N.H.
	<b>BS</b>	George L. Schnable, Electrodeposition of Molten Metals and Alloys from Glycerine Solutions, Journal of the Electrochemical Society, October 1961, 964-969, Volume 108, Number 10, Electrochemical Society Inc : USA
	<b>BT</b>	William M. Saltman and Norman H. Nachtrieb, The Electrochemistry of Gallium, Journal of the Electrochemical Society, March 1953, 126-130, Volume 100, Number 3, Electrochemical Society Inc: USA
	<b>BU</b>	Marianna Kemell, Heini Saloniemi, Mikko Ritala, and Markku Leskela, Electrochemical Quartz Crystal Microbalance Study of the Electrodeposition Mechanisms of CuInSe <sub>2</sub> Thin Films, Journal of The Electrochemical Society, 2001, C110-C118, Volume 148, Number 2, Electrochemical Society: USA
	<b>BV</b>	A. Kampmann, P. Cowache, D. Lincot, and J. Veidel, Junction Formation Studies of One-Step Electrodeposited CuInSe <sub>2</sub> on CdS, Journal of The Electrochemical Society, 1999, 150-155, Volume 146, Number 1, Royal Society of Chemistry (Great Britain)
/JB/	<b>BW</b>	C. Eberspacher, K. Pauls, and J. Serra, Non-vacuum processing of CIGS solar cells, UNISUN, pages 1-5, 2003 Newbury Park, CA

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/JB/	<b>BX</b>	YASUTO MIYAZAWA and G. M. POUND, HOMOGENEOUS NUCLEATION OF CRYSTALLINE GALLIUM FROM LIQUID GALLIUM, Journal of Crystal Growth 23 (1974) 45-57
	<b>BY</b>	L. BOSIO and C. G. WINDSOR, Observation of a Metastability Limit in Liquid Gallium, Physical Review Letters, Vol. 35, Number 24, 15 December 1975
	<b>BZ</b>	DI CICCIO, Andrea, Phase Transitions in Confined Gallium Droplets, Physical Review Letters (1998), 81(14), 2942-2945. Publisher: American Physical Society
	<b>CA</b>	POLONI, R.; DE PANFILIS, S.; DI CICCIO, A.; PRATESI, G.; PRINCIPI, E.; TRAPANANTI, A.; FILIPPONI, A., Liquid gallium in confined droplets under high-temperature and high-pressure conditions, PHYSICAL REVIEW B 71. 184111 (2005).
	<b>CB</b>	DI CICCIO, A.; FUSARI, S.; STIZZA, S., Phase transitions and undercooling in confined gallium, Philosophical Magazine B: Physics of Condensed Matter: Statistical Mechanics, Electronic, Optical and Magnetic Properties (1999), 79(11/12), 2113-2120. Publisher: Taylor & Francis Ltd.
	<b>CC</b>	HEYDING, R. D.; KEENEY, W.; SEGEL, S. L., Metastable phases in gallium dispersions, Journal of Physics and Chemistry of Solids (1973), 34(1), 133-6.
	<b>CD</b>	LEE, Y.; WANG, T.; LIU, Y.; AO, J.; LI, H.; SATO, H.; NISHINO, K.; NAOI, Y.; SAKAI, S., Fabrication of high-output-power AlGaIn/GaN-based UV-light-emitting diode using a Ga droplet layer, Japanese Journal of Applied Physics, Part 2: Letters (2002), 41(10A), L1037-L1039.
	<b>CE</b>	SCHWARCZ, D.; NAKAHARA, S.; OHRING, M., TEM observations of early nucleation and growth stages in aluminum films on liquid gallium droplets, Thin Solid Films (1994), 245(1-2), 260-6
	<b>CF</b>	KARPOV, S. Y.; BORD, O. V.; TALALAEV, R. A.; MAKAROV, Y. N., Gallium droplet formation during MOVPE and thermal annealing of GaN, Materials Science & Engineering, B: Solid-State Materials for Advanced Technology (2001), B82(1-3), 22-24
	<b>CG</b>	Berty, J.; David, M. J.; Lafourcade, L.; Defrain, A., Electron diffraction study of the supercooling of very small gallium droplets, Scripta Metallurgica (1976), 10(7), 645-8
	<b>CH</b>	Huang, J. B.; Fei, G. T.; Shui, J. P.; Cui, P.; Wang, Y. Z., Preparation and internal friction of nanoscale gallium droplets, Physica Status Solidi A: Applied Research (2002), 194(1), 167-172.
/JB/	<b>CI</b>	US Patent Application Serial Number 11/290,633 titled "METALLIC DISPERSION" filed March 15, 2005 (NSL-019B).

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